ENGINEERING MAINTENANCE BRANCH BULLETIN

Issue # 002   *June 2005*

This is the second issue of what is a monthly bulletin to MSC ships and shoreside personnel. The purpose of the bulletin is to inform all concerned of current COMSC Preventive Maintenance management practices associated with any new or revised policy and procedures, along with helpful tips & tricks for improved maintenance. The bulletin will also discuss and present any upcoming initiatives in the various programs.

This month's Bulletin contains:

- ➢ *SAMM/Maintenance Tip*

- ➢ *Vibration Monitoring System – An Introduction*

- ➢ *Question of the Month – Quantifying the Vibration Level*

- ➢ *CMEO Training – Come & Get It!*

- ➢ *Calling All ChEngs!*

- ➢ *N711 – Who Are We?*

Extra, Extra! Engineering Maintenance Branch Website Updated– Read All About It!

The Engineering Maintenance Branch website is in the process of being updated, along with some helpful downloads (OAS Guide, past issues of our bulletin, etc.).

For more info, go to: (http://www.msc.navy.mil/n7/engmgmt/engmgmt.htm), and check back often!

WANTED… PICTURES – HERE!

It is said, "A Picture's worth a thousand words." Let's prove it right. If you have pictures of Shipboard Maintenance (Vibration testing, Oil Sampling, machinery upkeep, etc.) being performed, please send them (along with a *brief* narrative as to what the picture is) to Norm Wolf (e-mail: Norman.wolf@navy.mil).


SAMM/Maintenance Tip

Compare the SAMM CMS32 LO product chart to actual products in use.

1) Open SAMM CMS32 and choose tools/LO product chart from the menu bar. This will display all of the lubricants, equipment, and associate measurement point descriptions (LO Label descriptions) in use.

2) Ensure that the measurement point description matches the equipment & that the lubricant stated is the actual lubricant in the machine.

3) If there are discrepancies in either, please submit a SAMM Feedback.

-Reader Tip provided by Seaworthy Systems Incorporated (SSI)

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Vibration Monitoring System
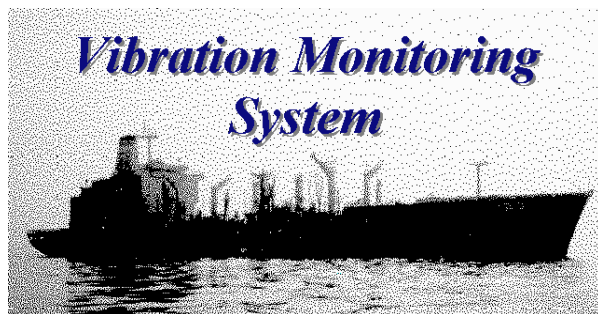
AN INTRODUCTION

BACKGROUND:

As a means of increasing operational readiness and reducing vessel maintenance costs, a computerized machinery condition monitoring system based on vibration signature analysis is implemented fleet-wide. This program, known as Vibration Monitoring System (VMS) is based on equipment, computer software and procedures, which are proven aboard both naval and merchant vessels.

The program defines and trends machinery condition to provide an objective basis for maintenance and repair planning. Specific condition reports allow repairs to be made on a scheduled basis prior to actual machine failure. The program can also serve as an effective Quality Control check following repairs by ships force and by shore based repair organizations.

An important objective of the program is meeting the American Bureau of Shipping (ABS) requirement for Special Survey and Continuous Survey based on VMS in conjunction with other maintenance programs currently in place.

ROUTINE:

The shipboard VMS program is designed to operate on a quarterly cycle wherein one third of the ship's machines are tested each month. MSC's Daily Operations Manual (SAMM Version 5.07 sp1) is designed to serve as a quick reference for day-to-day operations of the DC-7 and DCA-31 data collectors, the VMS software, and the Expert System reports. It contains all the instruction necessary for the beginning user to conduct the required VMS testing, obtain

machine fault reports, conduct communication with the SAMM system, and send backups to shore.

ANALYSIS:

The primary responsibility for vibration data review and analysis rests with the ship. Numerous features in the VMS host software are provided to permit rapid and accurate analysis of the vibration spectra aboard ship. Users are cautioned to always check the Expert System results for validity and common sense prior to taking action on machine faults found by the software.

TECH ASSIST:

To receive a copy of the Daily Operations Manual (SAMM Version 5.07 sp1), contact the MSC Program Office. For technical assistance with any aspect of the VMS Program contact the MSC Global Helpdesk.

MSC:
Commander, Military Sealift Command
914 Charles Morris Ct. SE
Bldg. 157, Code N711e
Washington Navy Yard, D.C. 20398-5540
(202) 685-5738
david.greer1@navy.mil

MSC Global Helpdesk
E-mail: MSC-Global.Helpdesk@mscglobalhelpdesk.msc.navy.mil
PH: 1-800-672-4356 or 1-757-233-3108

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Question of the Month: Quantifying the Vibration Level

(from Brüel & Kjær's "Primer" Series (see http://www.bksv.com/2148.asp for more vibration tidbits)

How do I Quantify the Vibration Level?

The vibration amplitude, which is the characteristic that describes the severity of the vibration, can be quantified in several ways. On the diagram, the relationship between the peak-to-peak level, the peak level, the average level and the RMS level of a sine wave is shown.

The peak-to-peak value is valuable in that it indicates the maximum excursion of the wave, a useful quantity where, for example, the vibratory displacement of a machine part is critical for maximum stress or mechanical clearance considerations.

The peak value is particularly valuable for indicating the level of short duration shocks etc. But, as can be seen from the drawing, peak values only indicate what maximum level has occurred, no account is taken of the time history of the wave.

The rectified average value, on the other hand, does take the time history of the wave into account, but is considered of limited practical interest because it has no direct relationship with any useful physical quantity. The RMS value is the most relevant measure of amplitude because it both takes the time history of the wave into account and gives an amplitude value, which is directly related to the energy content, and therefore the destructive abilities of the vibration.
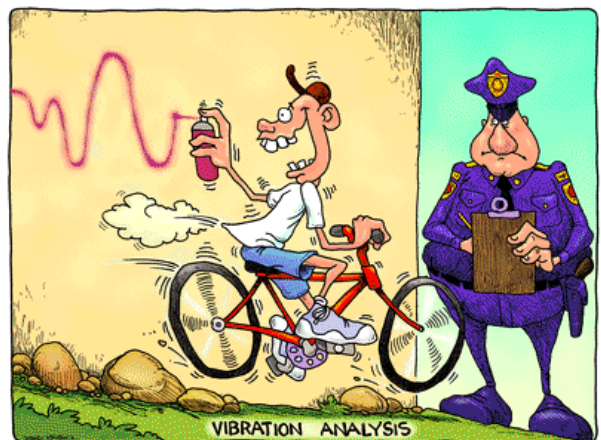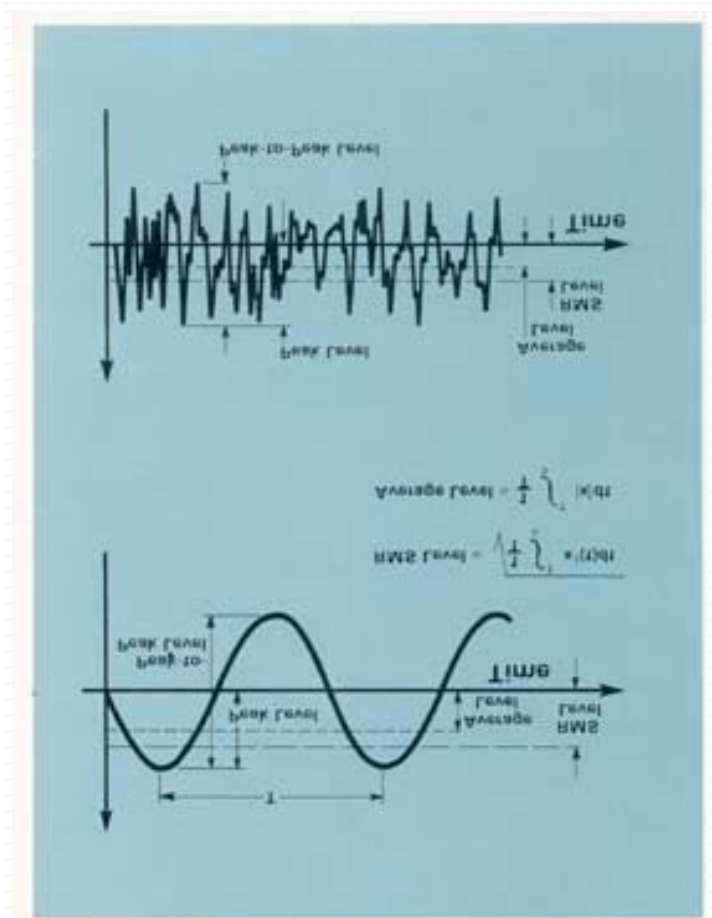
Courtesy of **www.educatorscorner.com**

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CMEO Training – Come & Get It!

CMEO (**C**ivilian **M**arine **E**ngineering **O**fficer) is a two-week training course (held quarterly) at the Naval Supply Corps School in Athens, GA. It is for both shipboard and shoreside engineers. The Engineering Directorate of the Military Sealift Command hosts the course and encourages *all* MSC engineers to attend (Note: MSC shipboard engineers are given priority when classes are full).

CMEO provides training on an array of topics such as: SAMM (MALIN, Logbook, etc.), Vibration Monitoring, Lube Oil, Fuel Oil (NEURS), Chemicals (boiler treatment, sewage treatment, etc.), Supply (COSAL, ShipCLIP), Environmental, and Safety. SAMM is interactively taught using actual data and each module is discussed extensively.

Upcoming CY '05 class dates:

- ➢ July 11-22, 2005
- ➢ December 05-16, 2005

We will post classes for CY '06 as soon as they are passed to us. For further information and to sign up, please go to the CMEO website (http://63.219.124.12/cmeoclasssignup/cmeo.htm), or contact Dave Greer (david.greer1@navy.mil) with any questions.

Calling All ChEngs, Calling All ChEngs!!

Be on the lookout for any and all Feedback from your Engine Department. Feedback is *ESSENTIAL* to making this a helpful bulletin to all shipboard personnel in doing your job "smarter not harder". We do want this to be *YOUR* Maintenance Management Bulletin. What we don't want is to give you more junk mail. If there's a SAMM or maintenance tip, topic, question, suggestion, or comment on how to make this useful, or something relating to Engineering Maintenance you think should get out to the ships, please pass it on. Send your submission to Randy Torfin (randel.torfin@navy.mil).

COMING UP FOR NEXT MONTH!

SAMM PM OPTIMIZATION!

Another SAMM/Maintenance Tip!

Another Question of the Month

N711 - WHO ARE WE?

The principals in the Engineering Maintenance Branch are:

Branch Chief – Randy Torfin (202) 685-5744 (Randel.Torfin@navy.mil)

Sr. Mechanical Engineer – Will Carroll (202) 685-5742 (William.S.Carroll@navy.mil)

Sr. Mechanical Engineer –Norm Wolf (202) 685-5778 (norman.wolf@navy.mil)

Mechanical Engineer – Liem Nguyen (202) 685-5969 (liem.nguyen@navy.mil)

Mechanical Engineer – Andrew Shaw (202) 685-5721 (andrew.e.shaw@navy.mil)
Electrical Engineer – David Greer (202) 685-5738 (David.Greer1@navy.mil)